

# Energy supply and consumption

2018

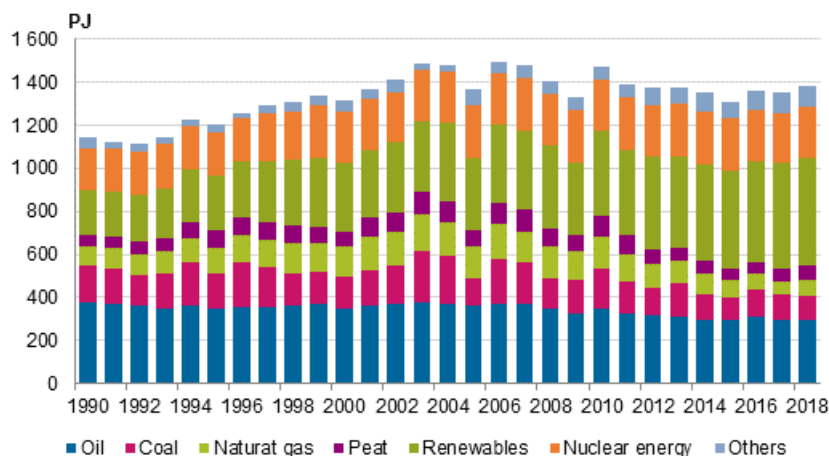
## Use of fossil fuels and renewable energy increased in Finland in 2018

**Correction on 12 December 2019 at 10 am.** The Corrections are indicated in red.

**Correction on 14 January 2020.** The Corrections are indicated in red.

According to Statistics Finland, total consumption of energy in Finland amounted to 1.38 million terajoules (TJ) in 2018, which corresponded to a growth of two per cent compared with the previous year. The consumption of electricity totalled 87.5 terawatt hours (TWh), which was two per cent more than in the previous year. Consumption of fossil fuels and peat increased in total by three per cent. The use of natural gas and peat increased most, both by 15 per cent. The use of renewable energy also grew by two per cent remaining at a record high level just like in previous years. The greenhouse gas emissions of the energy sector went up by two per cent as a result of increased use of natural gas and peat.

### Total energy consumption in 1990 to 2018



The use of renewable energy increased by two per cent in 2018 from the year before. Wood fuels remained the biggest energy sources in Finland and their share of total energy consumption was 27 per cent. Consumption of wood fuels increased by three per cent and the use of black liquor from the forest industry increased most, by eight per cent, due to increased production of pulp. The use of wood fuels has never

before been this high. Due to low water levels the production of hydro power fell by 10 per cent, but this decrease was partly compensated by wind power, whose production rose by 22 per cent. In relative terms, the production of **solar energy** increased most, by 63 per cent, but its share in total energy consumption is still low, 0.3 per mil.

Nearly 37 per cent of total energy consumption was covered with renewable energy sources and **41** per cent of final consumption in 2018. As late as 1990, the share of renewable energy in total consumption was just 18 per cent. Since then it has grown steadily, the growth getting faster in the 2010s.

EU targets for renewable energy are calculated relative to total final energy consumption. Calculated in this manner, the share of renewable energy was **41** per cent in Finland in 2018 based on Statistics Finland's data. Finland has exceeded its target for the share of renewable energy, 38 per cent of final energy consumption, since 2014. The share of renewable energy in final energy consumption has been the second highest among EU countries.

The share of fossil fuels and peat in total energy consumption remained at last year's level, 40 per cent in total, even though their consumption increased by three per cent. The use of natural gas and peat increased most, both by 15 per cent. The consumption of natural gas made an upturn after several years of decline. More natural gas was used in the production of electricity and heat than in 2017. The use of energy peat was higher in 2018 than in several earlier years. The growth in peat use was affected by the exceptional weather conditions during the heating season at the start of the year and the resulting growth in demand. The increase in the use of natural gas and energy peat was also boosted by the higher wholesale price of electricity. The consumption of oil, in turn, fell by one per cent. The consumption of coal remained at the level of 2017, but the consumption of hard coal decreased by four per cent. Apart from hard coal, coal consumption also includes coke, blast furnace and coke oven gases used in manufacturing. [The greenhouse gas emissions of the energy sector went up by two per cent as a result of increased use of fossil fuels and peat.](#)

Nuclear energy covered 17 per cent of total energy consumption and other energy sources six per cent.

#### **Total energy consumption in 2017 to 2018, terajoule**

	2017	2018	Change %
Wood fuels	362 314	374 705	3
Oil	313 545	309 712	-1
Nuclear energy	235 352	238 700	1
Coal	113 651	113 359	0
Natural gas	65 986	75 614	15
Peat	53 860	61 877	15
Net imports of electricity	73 532	71 769	-2
Hydro power	52 597	47 295	-10
Wind power	17 263	21 019	22
Others	64 174	66 782	4
<b>Total</b>	<b>1 352 275</b>	<b>1 380 830</b>	<b>2</b>

In Finland, the consumption of electricity totalled 87.5 terawatt hours (TWh) in 2018, which was **2** TWh more than in the previous year. At the same time, 67.5 TWh of electricity was produced, which is 2.5 TWh more than in 2017. Altogether, 23 per cent of electricity consumption was covered with electricity imports. Electricity was imported most from Sweden (14 TWh) and from Russia (8 TWh). Exports of electricity to Estonia exceeded its imports from Estonia. Combined heat and power production covered 25 per cent of electricity consumption and condensing power, producing electricity only, five per cent. The share of hydro power in electricity consumption was 15 per cent, that of wind power seven per cent and

that of solar power 0.1 per cent. Again, nuclear power accounted for roughly one-third of the consumed electricity.

Final energy consumption increased by one per cent year-on-year. The growth of industrial output continued further, which was also visible in an about **three** per cent growth in final energy consumption of manufacturing. Energy use grew most in energy-intensive industries, the forest industry, the metal industry and the chemical industry. The growth especially in the forest industry increased the consumption of wood fuels. Manufacturing sector uses the largest share, 47 per cent, of the final energy consumption.

Space heating of buildings needed **two** per cent less energy in 2018 compared to 2017. The warmer weather than in the previous year decreased the need for heating energy. The use of heat pumps for heating has grown significantly from the start of the millennium, which is visible in the statistics in the growing use of both heat pump energy and heat pump electricity. In addition to the area to be heated and the energy efficiency of the building stock, the need for heating energy is also affected by the outdoor temperature.

Energy consumption in transport rose by **about** half a per cent in 2018. The consumption of petrol still continued falling, whereas the consumption of diesel oil was still on the growth track. The most significant use of diesel oil is transports of trade and industry. In Finland, transport fuels contain liquid biocomponents that are included in total amounts of petrol and diesel. The share of alternative driving power of vehicles in domestic energy use in road traffic was around **9.5** per cent in 2018 in Finland, of which the combined share of liquid biofuels was **9.2** per cent, the share of electricity was **0.1** per cent, **and that of gases 0.2** per cent. Biogas used in traffic grew by 79 per cent from 2017. The share of transport was 16 per cent of final energy consumption.

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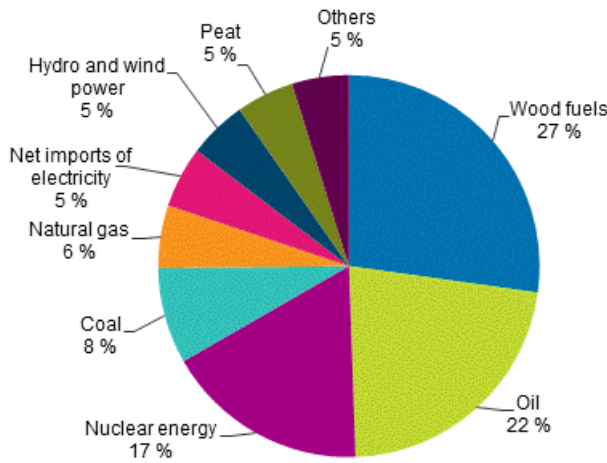
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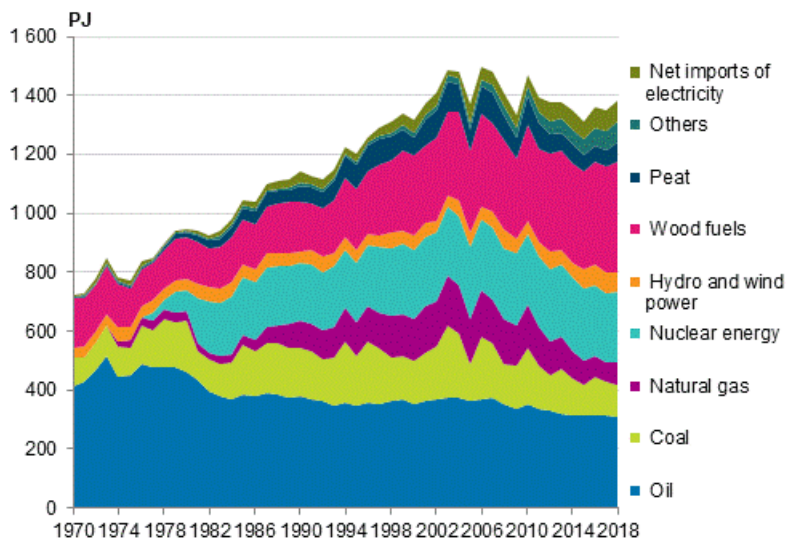
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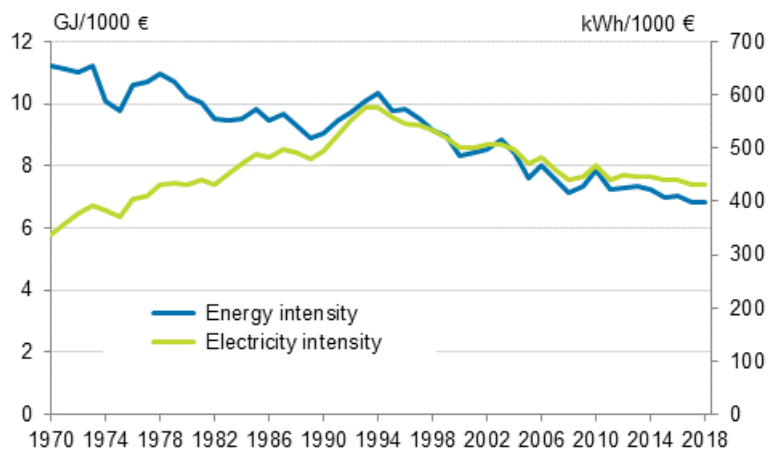
**Appendix figure 1. Total energy consumption 2018**



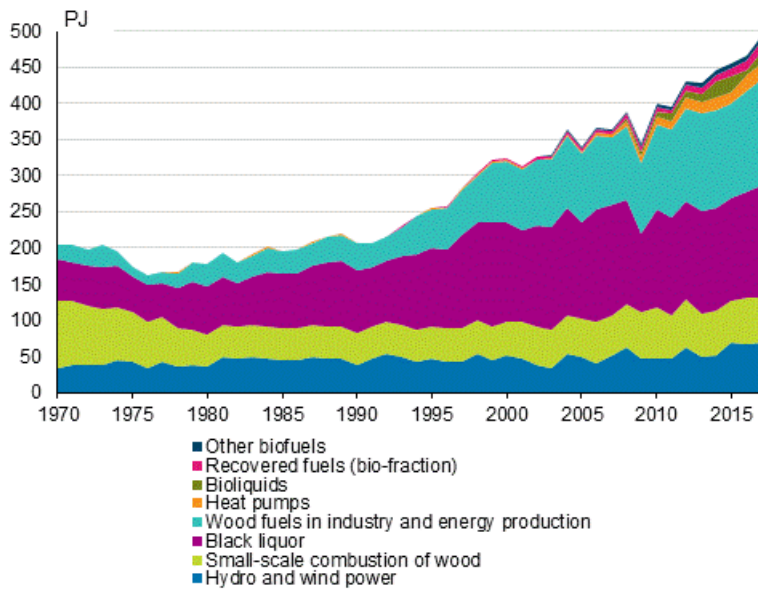
**Appendix figure 2. Total energy consumption 1970–2018**



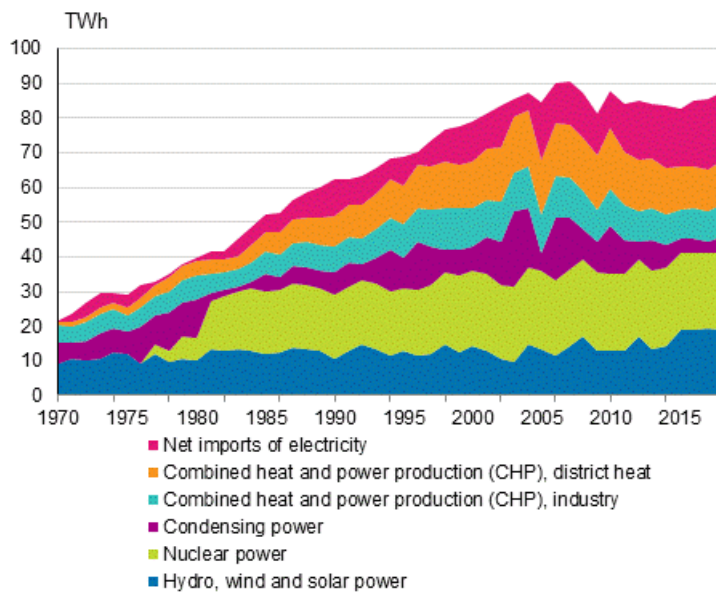
**Appendix figure 3. Energy- and electricity intensity 1970–2018**



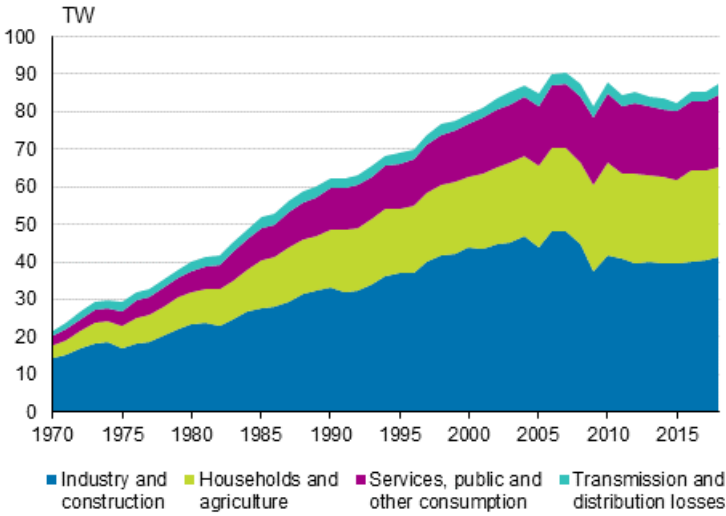
**Appendix figure 4. Renewable energy sources 1970–2018**



**Appendix figure 5. Electricity supply 1970–2018**



**Appendix figure 6. Electricity consumption by sector 1970–2018**



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Source: Statistics Finland, Energy supply and consumption